

REMARKS

Applicants have reviewed this application in light of the Office Action dated November 12, 2009. Claims 1-17 remain are pending in the application. Applicants request reconsideration of the rejection in light of the following arguments.

Preliminarily, Applicant would like to direct the Examiner's attention to MPEP § 706.02(l), which states, "Prior art rejections should ordinarily be confined strictly to the best available art." The MPEP further states that cumulative rejections should be avoided. In the present case, the Examiner has made two separate rejections against claims 1 and 10. Applicant respectfully requests that the Examiner confine future rejections to only the best prior art.

Claims 1-17 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent No. 7,609,763 to Mukerjee et al. (hereinafter "Mukerjee") in view of U.S. Patent Publication No. 2004/0228413 to Hannuksela (hereinafter Hannuksela 1).

Claim 1 recites, *inter alia*, "predicting the at least one missing or corrupted data for the identified macroblock by motion compensating data from both the first previously transmitted picture and a second previously transmitted reference picture." Claim 10 recites analogous language. The Examiner asserts that Mukerjee teaches this element in FIG. 11 of the reference. While FIG. 11 shows a set of three consecutive frames, applicants note that FIG. 11 does *not* illustrate the use of two previous pictures in prediction. Instead, FIG. 11 clearly shows a *bi-predictive* frame (also known as a 'B' frame) which refers to one previous picture and one *future* picture. This point is reinforced in the body of the patent, which states, "The encoder uses the two implied motion vectors to address macroblocks in the previous reference frame 1140 and the *future* reference frame 1130." Mukerjee, Col. 16, lines 36-40 (emphasis added). The reference says nothing which so much as suggests the use of two previous images in error correction.

Hannuksela 1 does not cure the deficiencies of Mukerjee. Hannuksela 1 shows a set of frames, but each frame uses at most one previous frame. While some frames do use multiple images for their image correction (*see, e.g.*, Hannuksela 1, FIG. 6b), there are no frames which use multiple *previous* images. Applicants respectfully assert that Mukerjee and Hannuksela 1, taken alone or in combination, fail to disclose or suggest predicting missing or corrupted data by motion compensating data using a first previously transmitted picture and a second previously transmitted reference picture.

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In view of the foregoing, claims 1 and 10 patentably distinguish over the art of record. Claims 2–9 and 11–17 depend from claims 1 and 10 respectively and incorporate by reference all of the elements of their respective parent claims. Therefore, claims 1–17 are in condition for allowance.

In addition, the dependent claims include patentable subject matter separate and apart from that recited in the independent claims. Consider, for example, claim 3, which recites, “wherein the at least one missing or corrupted data is predicted using one of the temporal and spatial-direct modes derivation processes in accordance with at least one criterion selected prior to such predicting.” Claim 13 recites analogous language. The Examiner asserts that this element is disclosed by Mukerjee’s use of the previous and future frames, as well as in Mukerjee’s use of backward and forward vectors for prediction.

Applicants maintain that claim 3 patentably distinguishes over the art of record. A review of Mukerjee shows that the reference does not concern itself with spatial concealment. As noted in the present specification, “Spatial concealment seeks to derive the missing/corrupted pixel values by using pixel values from other areas in the same image, thus exploiting the spatial redundancy between neighboring blocks in the same frame.” (Applicants’ specification, page 1, lines 22–24.) This is in contrast to *temporal* concealment, which corrects for errors by using redundancy across between different images. In addition to their definition in the present specification, these terms are very well known in the art.

Mukerjee *only* corrects for errors by comparing multiple images. Similarly, Hannuksela 1 deals solely with temporal processes. Therefore, Mukerjee and Hannuksela 1, taken alone or in combination fail to disclose or suggest any spatial process. Applicants maintain that Mukerjee and/or Hannuksela 1, taken alone or in combination, fail to disclose or suggest using one of a temporal and a spatial process *in accordance with at least one criterion selected prior to such predicting*.

Therefore claims 3 and 13 recite patentable subject matter not included in the independent claims. In addition, subsequent claims further define the recited criterion of claims 3 and 13. For example, claim 4 recites, “wherein selection of one of the temporal and spatial-direct modes derivation processes is made in accordance with concealment region size.” Claim

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14 recites analogous subject matter. The Examiner asserts that Mukerjee discloses this element in its depiction of a "current macroblock."

As noted above, neither Mukerjee nor Hannuksela I deals with spatial concealment. Therefore, the examiner cannot argue that these references provide particular means for selecting between temporal and spatial processes. However, even assuming *arguendo* that the references provide such means, the Examiner's reference to a "current macroblock" has nothing whatsoever to do with the size of a given region. There is nothing in either reference that even approaches selection in accordance with concealment region size. Therefore Mukerjee and Hannuksela I, taken alone or in combination, fail to disclose or suggest selection in accordance with region size. Claims 4 and 14 recite patentable subject matter separate and apart from that recited by the independent claims.

As a further example, claim 6 recites, "performing the temporal and spatial-direct modes derivation processes; and selecting results of one of the temporal and spatial-direct modes derivation processes in accordance with at least one a posteriori criterion." Claim 16 recites analogous language.

Neither reference discloses any element for performing a spatial-direct mode derivation process, as discussed repeatedly above. The Examiner's assertion that this element is disclosed by Mukerjee in FIG. 10 has no merit. At best, FIG. 10 *explicitly* discloses a temporal process.

Furthermore, neither reference discloses the feature of selecting the results of a temporal or a spatial process in accordance with an a posteriori criterion. The Examiner notes that a mode may be selected based on an efficiency evaluation using one or more of the *motion vector* modes. However, motion vectors belong to *temporal* concealment processes. Therefore, Mukerjee only discusses selection between different *temporal* modes.

Therefore, Mukerjee and Hannuksela I, taken alone or in combination, fail to disclose or suggest performing temporal *and* spatial-direct modes derivation processes and selecting the results of one of the temporal and spatial-direct modes derivation processes in accordance with at least one a posteriori criterion. Thus, claims 6 and 16 include patentable subject matter separate and apart from that recited in the independent claims.

To reiterate, for *at least* the above reasons, applicants maintain that claims 1-17 are in condition for allowance. Reconsideration of the rejection is earnestly solicited.

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Claims 1 and 10 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent No. 6,744,924 to Hannuksela et al. (hereinafter Hannuksela 2) in view of Hannuksela 1.

As noted above, this rejection is cumulative with the above rejection. It is respectfully requested that the Examiner limit the rejection of the claims to *only* the best art.

Claim 1 recites, *inter alia*, "predicting the at least one missing or corrupted data for the identified macroblock by motion compensating data from both the first previously transmitted picture and a second previously transmitted reference picture." Claim 10 recites analogous language. The Examiner asserts that Hannuksela 2 teaches this element by through its two frame stores, 40a and 40b.

Hannuksela 2 describes a video stream broken into two threads. The threads maintain the order of the pictures. *See* Hannuksela 2, FIG. 6. When a frame, for example P2, is damaged, the decoder waits for the next frame, P3. *See* Hannuksela 2, Col. 9, lines 28–30. The decoder then corrects for the error based on P1 and/or P3. *See id* at Col. 9, lines 33–37. In other words, just as with Mukerjee, Hannuksela 2 shows predicting based on a previous frame and a *future* frame, rather than two previous frames.

Hannuksela 2's frame stores 40a and 40b do not in any way imply the use of multiple previous images for correcting the errors in a particular frame. Instead, the frame stores merely store the images of the respective threads. *See* Hannuksela 2, Col. 10, lines 54–60. Nowhere does Hannuksela 2 provide indication whatsoever that prediction takes place using multiple previous images.

As noted in detail above, Hannuksela 1 cannot cure the deficiencies of Hannuksela 2 with respect to this feature. Therefore, Hannuksela 1 and 2, taken alone or in combination, fail to disclose or suggest predicting missing or corrupted data by motion compensating data from both the first previously transmitted picture and a second previously transmitted reference picture. Accordingly claims 1 and 10 are in condition for allowance and applicants request reconsideration of the rejection.

Conclusion

In view of the foregoing, applicants solicit entry of this amendment and allowance of the

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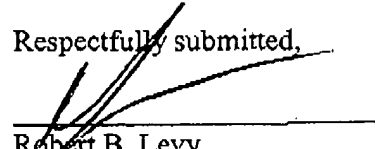
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claims. If the Examiner cannot take such action, the Examiner should contact the applicant's attorney at (609) 734-6820 to arrange a mutually convenient date and time for a telephonic interview.

No fees are believed due with regard to this Amendment. Please charge any fee or credit any overpayment to Deposit Account No. 07-0832.

Respectfully submitted,

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